Atty Docket No.:50124-00303

## REMARKS

No new matter has been added. Claims 45-47 have been allowed, and claims 48, 49, 51, 52, 54, 55, 65, 66, 68, and 69 have been rejected. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Claims 48, 49, 51, and 68 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,954,629 to Yanagidaira et al. ("Yanagidaira") in view of U.S. Patent No. 5,241,967 to Yasushi et al. ("Yasushi") and U.S. Patent No. 6,001,065 to DeVito ("DeVito"). In support of the argument, the Examiner states that Yanagidaira shows a device having an active electrode, an amplifier and a selectively adjustable filter but does not disclose or suggest a sound generator or radio transmitter. For these elements, the Examiner relies on Yasushi and DeVito, respectively. (*See* 9/20/07 Office Action, p. 2). (*Id.*).

In response to the previously submitted argument that Yanagidaira does not teach or suggest "a receiver receiving and amplifying the brain wave broadcast signal", as recited in claim 48, the Examiner notes that the proposed combination "only adds a transmitter at the headband and a receiver at the monitor" so the proposed combination "would still have the amplifier 24 after the receiver." (*See* 9/20/07 Office Action, p. 5).

However, it is submitted that claim 48 designates the amplifier and the receiver of the medical system as two separate components, by virtue of the separate functions of each component disclosed therein. Specifically, the medical system of claim 48 recites an "amplifier situated on the connection means, the amplifier amplifying the detected brain waves" and a "receiver receiving and amplifying the brain wave broadcast signal". The Examiner proposes that the amplifier 24 can also perform the functions of the receiver of claim 48, by virtue of the fact that it is still present in the Yanagidaira device after a first amplification has been performed. However, it is submitted that the amplifier 24 can not be used to perform the second amplification, as it is known in the art that an amplifier can only have one output signal. The amplifier 24 "amplifies a very weak brain wave signal detected by the sensor unit 10 to a predetermined value." (*See* Yanagidaira, col. 1, ll. 58-60). Employing a design wherein the amplifier 24 also receives a second, processed frequency signal in addition to the unprocessed analog EEG signal is therefore not a feasible modification, as doing so would place the EEG

signal of the Yanagidaira device in a continuous loop wherein the output of the system would be fed back in to the input of the amplifier 24. Accordingly, it is submitted that the modification proposed by the Examiner is not allowable.

It is further noted that the amplifier 29 of the Yanagidaira device does not overcome the deficiencies of the amplifier 24. Specifically, the amplifier 29 is connected to a light-emitting member 32, wherein the gain of the amplifier 29 may be altered to produce an electric signal for light stimulation. (*Id.*, col. 1., ll. 49-54; col. 2, ll. 10-14; Fig. 1). Specifically, amplifier 29 does not constitute a "receiver", as recited in claim 48. It is further noted that the amplifier 29 is the terminal component in the Yanagidaira device, wherein the amplifier 29 is designed to amplify a signal for the purpose of providing a light to the light emitting member 32. (*Id.*) The output of the amplifier 29 is directed to powering the light emitting member 32 and is not designated to undergo any processing subsequently. The receiver of claim 48, however, is designated to amplifying a brain wave broadcast signal and sending the output thereof to be filtered , as recited in portion (f) of claim 48 and converted into a sound, as recited in portion (g) of claim 48. Accordingly, it is submitted that the amplifier 29 is not comparable to a "a receiver receiving and amplifying the brain wave broadcast signal", as recited in claim 48.

It is submitted that neither Yasushi nor DeVito cures the above-described deficiency in the Yanagidaira device. Although the Examiner points out that DeVito shows an amplifier on the transmission side of the system, namely, the transmitter 30 on the headband 20 (*See* DeVito, col. 4, ll. 35-49), the Examiner does not address the feature of a "receiver receiving and amplifying the brainwave broadcast signal", as recited in claim 48.

Accordingly, it is respectfully submitted that neither Yanagidaira nor Yasushi nor DeVito, either alone or in combination, teach or suggest a "receiver receiving and amplifying the brainwave broadcast signal", as recited in claim 48 and claim 48 is therefore allowable over Yanagidaira, Yasushi and DeVito. Because claims 49 and 51 depend from, and, therefore include all of the limitations of claim 48, it is respectfully submitted that these claims are also allowable.

Claim 68 recites limitations substantially similar to claim 48 including "receiving and amplifying the brain wave broadcast signal using a hand-held radio receiver." Thus, it is respectfully submitted that claim 68 is also allowable for at least the same reason stated above in

regard to claim 48.

Claims 48, 49, 51, 52, 55, 65, and 68 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,357,957 to Itil et al. ("Itil") in view of U.S. Patent No. 4,683,892 to Johansson ("Johansson") and U.S. Patent No. 4,454,886 to Lee ("Lee"). In support of the rejection, the Examiner states that Itil discloses the invention as claimed except for determination of brain dysfunction and producing an audible output but that these features are disclosed in Johansson and Lee, respectively. (*See* 9/20/07 Office Action, pp. 2-3).

In response to the argument previously submitted, the Examiner contends that Lee "teaches the concept of using sound, to provide more immediate feedback" and that the rejection can be upheld because the "Federal circuit has established that a reference is good for all it teaches." (*See* 9/20/07 Office Action, p. 5). However, it is noted that although Lee teaches generating a sound output signal 24 from brainwaves 22 of a patient, Lee does not specify a "sound generator converting the *frequency band signal* into a sound". The frequency band signal is defined in claim 48, which recites "a selectively adjustable filter separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal". The Lee device, on the other hand, is directed to the conversion of an entire brainwave 22 into a sound output signal whereas claim 48 employs a sound generator converting only a "frequency band signal into a sound". (*See* Lee, col. 2, ll. 24-29; Fig. 1). The limitations of claim 48 allow for the generation of a sound for a frequency band, wherein the generated sound is indicative of the behavior of said frequency band. Conversely, sound corresponding to brainwave 22 would be indicative of the entire brainwave of a patient, wherein the generated sound would encompass all frequency bands comprised therein and a subsequent analysis by a hardware system would be needed for interpretation of the sound. The present invention seeks to eliminate the need for this subsequent interpretation by generating a sound in response to a specific frequency band(s). Accordingly, it is submitted that Lee fails to teach or suggest a "sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves", as recited in claim 48. By merely providing the concept of using sound to provide immediate feedback, Lee does not overcome the limitations of claim 48, which recite the conversion of one or more *frequency band* signals into sound.

It is further noted that the mere fact that Lee "teaches the concept of using sound, to provide more immediate feedback" does not overcome the limitations of claim 48 because the sound generated by Lee can not be used to "analyze brain waves of a subject", as recited in claim 48. (*See* 9/20/07 Office Action, p. 5). In order for Lee to perform the aforementioned function, a system where the brainwave 22 has to be subsequently analyzed (i.e., a hardware analysis system) would have to be employed. It is noted that employing such a system would change the principle of operation of the Lee device, as the sound generated by the sound generator of the Lee device would provide no useful information to a listener unless it was further analyzed. Accordingly, it is submitted that Lee does not teach or suggest "sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves", as recited in claim 48.

It is further noted that Itil and Johansson, either alone or in combination, do not cure the deficiencies of Lee. It is submitted that claim 48 is allowable over the proposed combination for at least this reason. Because claims 49 and 50 depend from, and therefore include all of the limitations of claim 48, it is respectfully submitted that these claims are also allowable.

Claim 52 recites limitations substantially similar to claim 48 including "a selectively adjustable filter separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal." Thus, it is respectfully submitted that claim 52 is also allowable for at least the additional reasons stated above in regard to claim 48. Because claims 55 and 65 depend from, and, therefore include all of the limitations of claim 52, it is respectfully submitted that these claims are also allowable.

Claim 68 recites limitations substantially similar to claim 48 including "selectively separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal". Thus, it is respectfully submitted that claim 68 is also allowable for at least the additional reasons stated above in regard to claim 48.

Claims 54 and 66 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Itil in view of Johansson and Lee and in further view of U.S. Patent No. 5,279,305 to Zimmerman. It

is respectfully submitted that Zimmerman does not cure the above-described deficiencies of Lee. Thus, because claims 54 and 66 depend from, and, therefore include all of the limitations of allowable claim 52, it is respectfully submitted that these claims are also allowable.

Claim 69 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Itil in view of Johansson and Lee in further view of U.S. Patent No. 4,454,886 to John. It is respectfully submitted that John does not cure the above-described deficiencies of Itil. Thus, because claim 69 depends from, and, therefore includes all of the limitations of allowable claim 68, it is respectfully submitted that this claim is also allowable.

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## CONCLUSION

It is therefore respectfully submitted that all of the pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated: December 17, 2007

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